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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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07/963,056 10/19/92 APPELDORN

R 47958USA1A

LEE, J EXAMINER

ESM1

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ART UNIT	PAPER NUMBER
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2501

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DATE MAILED: 05/27/93

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), _____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-16 are pending in the application.

Of the above, claims _____ are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☒ Claims 1-16 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☒ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).

12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received
☐ been filed in parent application, serial no. _____; filed on _____

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

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This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed. Note the comments of the Office Draftsman on the attached form PTO-948.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

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Claims 1, 5, 9 and 13 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Hekman et al.

Claims 2, 6, 10 and 14 are rejected under 35 U.S.C. § 103 as being unpatentable over Hekman et al. Note that Hekman et al clearly discloses that the optical fiber may have a succession of spaced reflective notches formed in the fiber at periodically spaced points (column 2, lines 25-31). Since one of the primary uses of the Hekman et al coupler is in optical communications, one would not expect the periodically spaced points to be regular in their spacing. To a person of ordinary skill in the art, any kind of spacing would have been obvious and would not have affected the basic teachings of the Hekman et al invention in any way. Thus, to have the spacing between successive reflecting notches decrease as the distance along the fiber increases would certainly have been an obvious feature in Hekman et al.

Claims 3, 4, 7, 8, 11, 12, 15 and 16 are rejected under 35 U.S.C. § 103 as being unpatentable over Hekman et al in view of Mori (U.S. Patent 5,005,931). Hekman et al^a is silent regarding any variation in the cross-sectional areas of the various reflecting notch surfaces when a succession of notches is utilized. Notice, however, that Mori (Figure 1) teaches a light radiator structure including a succession of spaced reflecting plates (analogous to the reflective notches of Hekman et al) wherein the cross-sectional areas of the reflecting surfaces increase as distance along the structure increases. This is done so that the amount of

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light radiated laterally from the structure remains even at each coupling-out point. Since the light radiator structure of Mori is very closely analogous to the optical fiber lateral coupling structure of Hekman et al (as pointed out above), a person of ordinary skill in the art would certainly have applied the teachings of Mori to the laterally reflecting fiber of Hekman et al. It would thus have been entirely obvious to have increased the cross-sectional areas of successive reflecting notches in Hekman et al, in accordance with the teachings of Mori, in order to maintain a constant level of light intensity at the output points.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Other optical fiber reflective notch couplers can be seen in Käch and Winzer. Hathaway et al shows another light guiding structure with spaced reflective facets for laterally coupling light out of the structure. Muehlemann et al shows an optical fiber illumination device employing a plurality of notched optical fibers.

The prior art submitted by applicants has been considered and made of record (see attached copy of form PTO-1449).

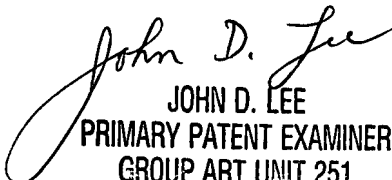
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicants are advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

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Any inquiry concerning this communication should be directed to Examiner John D. Lee at telephone number (703) 308-4886.


JOHN D. LEE
PRIMARY PATENT EXAMINER
GROUP ART UNIT 251